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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,534	06/27/2005	David M. Thomas	IRF-0041	7084
26259	7590	01/03/2008	EXAMINER	
LICATA & TYRRELL P.C. 66 E. MAIN STREET MARLTON, NJ 08053			MILLER, DANIEL H	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			01/03/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

poreilly@licataandtyrrell.com

# Office Action Summary

Application No.

10/536,534

Applicant(s)

THOMAS, DAVID M.

Examiner

Daniel Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/12/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Prosecution Application***

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/2007 has been entered.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

3. Regarding claim 1, the organo-metallic complex can not form a monolayer on the composite surface if it is dispersed or dissolved in a mixture of binder and carbon (the composite). A monolayer is a one atom or molecule thick coating, it is not clear that the surface of a composite can be coated by a substance when it is dissolved in it.

Clarification required.

***Claim Rejections - 35 USC § 102/103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 7 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gamble (US 3,702,592).

3. Gamble teaches a material which can comprise (an organo-metallic complex) molybdenum hexacarbonyl (column 4 line 40-45), with a binder added comprising phenol-formaldehyde resin and a heat transfer material, (carbon material) graphite (column 4 line 45-55). The molybdenum hexacarbonyl is a preferred organo-metallic complex by applicant (bottom page six of instant specification), the binder is the same as recited by applicant (also page 6 instant specification), as well as containing graphite and substantially similar composition as applicant's exemplary embodiment. Given the substantially similar composition one would expect the disclosed composition of Gamble to inherently have similar properties (i.e. electrical conductivity). The amount of (an organo-metallic complex) molybdenum hexacarbonyl used in Gamble is an amount sufficient to withstand 60 minutes critical temperature on an outside surface while not allowing the inside of the surface to rise above said temperature (column 4 line 22-30). This amount would inherently need to be at least a monolayer in order to prevent

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decomposition of the composite especially where the free surfaces would otherwise be exposed. In the alternative, it would have been obvious to provide at least a monolayer of material in order to provide heat protection and allow the organo-metallic complex of Gamble to adequately protect all free surfaces.

4. Regarding claim 7, the composition of Gamble is capable of functioning as a fuel cell separator. In the alternative it would have been obvious to one of ordinary skill in the art to use the composition of Gamble in a fuel cell because it would exploit known characteristics of resistance to heat and electrical conductivity commonly associated with carbon composites (such as those containing phenol resin, graphite, and organo-metallic complex). Further, metals are known to be electrically conductive, so is graphite (hence graphite's use as electrodes). Both are commonly used as additives in composite material to impart electrical properties therefore it would have been obvious to one of ordinary skill to exploit those expected properties.

### ***Response to Arguments***

5. Applicant's arguments filed 9/14/2007 have been fully considered but they are not persuasive. The previously asserted 112 rejection has been withdrawn due to amendment. However, a new 112 rejection has been asserted (see above). Regarding claim 1, the organo-metallic complex can not form a monolayer on the composite surface if it is dispersed or dissolved in a mixture of binder and carbon (the composite). A monolayer is a one atom or molecule thick coating, it is not clear that a substance can coat the surface of a composite when it is dissolved in it. Clarification required.

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6. A newly asserted rejection has been made in view of amended claims (see above).
7. Applicant argument that Gamble is in no way suggestive of a composition of Molybdenum hexacarbonyl, phenol-formaldehyde resin, and graphite exhibiting electrical conductivity. The claims are not commensurate in scope with asserted argument, as they do not require all of these components. Further, metals are known to be electrically conductive, so is graphite (hence graphite's use as electrodes). Both material are commonly used as additives in composite material to impart electrical properties therefore it would have been obvious to one of ordinary skill to exploit those expected properties. Rejection maintained.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571)272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Miller



KEITH D. HENDRICKS  
SUPERVISORY PATENT EXAMINER